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A NATURALISTIC THEORY OF THE REFERENCE OF THOUGHT TO REALITY

IN a paper called 'The Function of Cognition' which he published in *Mind* for 1885, Professor James set forth a theory which seems to me perhaps the most brilliant and original, and certainly the most far-reaching in its consequences, of all his contributions to thought. This theory has hitherto attracted little attention. Scarcely a reference to it is to be met with in later literature. And yet, if prediction were anywhere a thing to be attempted, I should be willing to risk a good deal on the prophecy that it is destined to form one of the foundation-stones of the evolutionary psychology of the future.

The subjective side of this theory was acutely and ably worked out by Dr. Dickinson S. Miller, in an article on 'The Meaning of Truth and Error' which he contributed to the *Philosophical Review* for 1893. In a later paper called 'The Confusion of Function and Content in Mental Analysis,' read before the American Psychological Association at its Columbia meeting in 1893 and published in the *Psychological Review* for 1895, Dr. Miller applied the theory to the problems of conception and belief, drawing the important distinction which appears in the title of the paper. Finally Professor James, in his presidential address on 'The Knowing of Things Together,' delivered at Princeton in 1894 and published in the *Psychological Review* for 1895, restated his theory briefly, acknowledging obligations to Dr. Miller for reconfirming his belief in it.

Now that the doctrines of the voluntarists and the pragmatists have given greater fluidity to our conception of knowledge, encouraging us to look at it not only as a thing serving a practical end but as a thing evolved, while this evolutionary view of knowledge is thought by many to discredit the existence of a reality beyond knowledge to which knowledge refers, it seems to me that the time has come for the James-Miller theory to play its part in the discussion. My object in this paper is to present a brief summary of it, referring the reader to the articles above mentioned for fuller acquaintance with it, and to propose certain additions which seem to me necessary to make of it a fully equipped working theory.

The central idea of the theory is nothing less than that knowledge is not an ultimate conception. The relation of cognition, by which a mental state transcends itself and lays hold of a reality beyond it—that, for instance, by which a memory has to do with a past experience, or a perception with the other sides and the future existence of the object, or a conception with a whole class of things, or a thought with, say, another person's mind—this supposedly mysterious relation is capable of analysis without remainder into the two commonplace and almost physical relations of resemblance and what Professor James calls 'operation.'

Imagine, he says, an existing reality *q*. Now let a feeling come into existence resembling the reality—a feeling having the quality *q*. We can not yet say, simply on the basis of the resemblance, that the feeling knows the reality. "Eggs resemble each other, but do not on that account represent, stand for, or know each other." But let the feeling, in addition to resembling, operate upon (or enable us to operate upon) the reality, and the relation forthwith becomes one of cognition. In virtue of the ties of resemblance and operation which connect the feeling with the reality, we may say that the latter is known to the former.

Cognition, in short, is nothing but a way of entering into relations with a reality. We enter into relations with it by having a feeling which resembles it and enables us to operate upon it. There is nothing further in cognition.

A mental state, then, in knowing a reality, does not pass bodily outside itself and 'intuite' the reality, but is connected with it by a purely external relation. "A feeling feels as a gun shoots. If there be nothing to be felt or hit, they discharge themselves *ins Blaue hinein.* If, however, something starts up opposite them, they no longer simply shoot and feel, they hit and know." The feeling is immediately acquainted only with its own quality, with its own subjective being; but since this quality resembles and brings us into the right practical relations to the reality, we say, when we consider the relations of the two retrospectively, that the feeling knows the reality.

In order that a mental state should know, then, it is not necessary that it should *mean* to know, or *know* that it knows—that it should 'point to' or 'intend' its object. Here we come to the subjective side of the theory, so effectively worked out by Dr. Miller.

The current notion that in knowing we somehow consciously aim at the reality, are aware of our distinctness from it and our will to represent it—that in memory, for instance, we are aware that the past experience is other than the remembering state, instead of simply being naïvely lost in the contemplation of it—this notion is not borne out by psychological analysis. It rests on a confusion between the point of view of naïve memory and that of later reflection. In looking back, we can distinguish the remembering state as a subjective fact from the reality it served to represent, and so know that we knew: at the first moment all we can do is to know, to be naïvely absorbed in the knowing.

So far Professor James and Dr. Miller.[1] In suggesting certain additions to the theory which seem to me necessary to make it complete and workable, I shall ask the reader to look at knowledge, first, in so far as it is a fact in the physical world. When I perceive a tree, light-rays from the tree outside my body have affected my retina and called forth by means of nerve-currents a brain-event in the occipital regions of my cortex. This brain-event enables me to adjust my relations to the tree, *e. g.*, to go out of the way if it stands directly in my path. Either in itself, or by calling forth other brain-events representing the shock and pain of collision with the tree, it enables me to innervate my muscles in such a way as to go out of my path. Now, observe the relations between this brain-event and the extra-bodily tree. In the first place, there is a resemblance. That the retinal event which calls the brain-event forth resembles the tree, is obvious; the whole *raison d'être* of vision, as an instrument of adjustment to external objects, lies in the securing of such an intra-bodily image. And, though the visual brain-event can hardly resemble the extra-bodily object as closely as the retinal image does, we may assume that the resemblance is not wholly lost, but that there remains to the end at the very least a relation which we may call correspondence. Secondly, the brain-event 'operates' upon the extra-bodily object, in this sense, that it enables us to adjust our relations to it. This may involve actual operation upon the object, or it may involve merely action with reference to it, as where, in the case of the tree, we turn out of our path.

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[1] I subjoin a few quotations from Professor James's articles in further elucidation of the text. 'The Function of Cognition,' p. 33: "The point of this vindication of the cognitive function of the . . . feeling lies . . . in the discovery that q does exist elsewhere than in it. . . . But the feeling itself can not make this discovery. Its own q is the only q it grasps; and its own nature is not a particle altered by having the self-transcendent function of cognition either added to it or taken away. The function is accidental; synthetic, not analytic; and falls outside and not inside its being." Ibid., p. 38: "We can say that any other feeling will be held cognisant of q, provided it both resemble q, and refer to q, as shown by its either modifying q directly, or modifying some other reality, p or r, which the critic knows to be continuous with q. Or more shortly, thus: *The feeling of q knows whatever reality it resembles, and either directly or indirectly operates on.*" 'The Knowing of Things Together,' pp. 108, 109: "At the very least, people would say that what we mean by knowing the tigers is mentally *pointing* towards them as we sit here. But now what do we mean by *pointing*, in such a case as this? . . . The pointing . . . is known simply and solely as a procession of mental associates and motor consequences that follow on the thought, and that would lead harmoniously, if followed out, into some ideal or real context, or even into the immediate presence of the tigers. . . . In all this there is no self-transcendency in our mental images taken by themselves. They are one physical fact; the tigers are another; and their pointing to the tigers is a perfectly commonplace physical relation, if you once grant a connecting world to be there. In short, the ideas and the tigers are in themselves as loose and separate, to use Hume's language, as any two things can be; and pointing means here an operation as external and adventitious as any that nature yields. . . . In representative knowledge there is no special inner mystery, but only an outer chain of physical or mental intermediaries connecting thought and thing."

Here, then, we have, between the visual brain-event and the extra-bodily object, the two elements which, according to Professor James, go to the making of the relation of cognition. The visual brain-event is the authorized representative of the external tree within the body; it is, as Huxley says, "a sort of physical idea." Moreover, the body acts, upon occasion of this brain-event, as if what it had to do with were not the brain-event but the extra-bodily object. This peculiar manner of action gives to the brain-event a sort of extra-bodily reference. It establishes between it and the tree a relation which, without too great a stretch of language, I think we may call quasi-cognitive.

But note, now, that the causal relations mentioned by Professor James are those only which run, if I may so say, from the brain-event to the object; whereas this brain-event, with its resemblance to and power to operate on the object, would never have been called forth at all had it not been for preceding causal relations running from the object to the brain. These causal relations, represented by the light-rays and the nerve-currents, are the *conditio sine quâ non* of the production of the brain-event; the least interference with them leads to an alteration or suppression of the brain-event, so that it no longer, or no longer correctly, represents the object. These causal relations, then, are the channel of cognitive communication, so to speak, between the brain-event and the object, and it is obvious that the relation of resemblance, which is the condition of correct representation and appropriate response, is only an incident of them. Finally, note that the possibility of both kinds of causal relations, with the resemblance they include, depends on the spatial proximity of the tree to the body. If the tree were a hundred miles away, it would not be possible for the body to enter into such quasi-cognitive relations to it.

The relation of cognition, then, as it appears in the physical world—or of quasi-cognition, perhaps it would be better to say—may be resolved without remainder into two sets of causal relations, one running from the object to the brain and involving resemblance, the other running from the brain back again to the object; and these causal relations are rendered possible by proximity in space.

All this while, I have said not a word of the perception which accompanies and, according to the unimpeachable testimony of physiological psychology, corresponds to the brain-event. And indeed, to delay as long as possible our involvement with psychophysical and metaphysical theories, I prefer to discuss first the parallel case of memory.

Memory depends for its possibility on what is called physiological retention: that is, on the fact that, after having operated in a certain way once, the brain is capable of operating in the same way again, in the absence of the external stimulus which was necessary on the first occasion.

Now, it is evident that the later brain-event resembles the earlier, and that we remember the earlier experience correctly only so far as this is the case. Moreover, it is obvious that this resemblance depends on causal relations, by which the earlier activity modifies the structure of the brain, that structure is conserved, and the conserved structure gives rise to the later activity. The channel of cognitive communication between the later brain-event and the earlier is to be found, then, in this chain of physical causes and effects; and any interference with it during the interval, as, for example, by a brain-lesion, may result in the alteration or total suppression of the later activity. Here, then, we have the same elements of a quasi-cognitive relation as before, except that it is not obvious how the later brain-event can react or 'operate' upon the earlier.

The fact is that 'operate' is an inexact expression. We have to do with causal relations, but not necessarily with causal relations that influence the object; the strict form of statement would be that we 'act with reference to,' or 'adjust our relations to,' the object. Now, this we evidently do in memory: the attitude is one of pure contemplation, or, it may be, of resignation, of acting as if it were useless any longer to act. Or, perhaps, in addition to this, the memory becomes to us by association a spur to present action, a guide in avoiding pitfalls and performing duties that we have learned of in the past. I can not resist the conviction that what is called 'reference to the past,' considered as something apart from all images, is simply a matter of this motor attitude.

We have been speaking, so far, simply of the physical side of memory. But, inasmuch as the reality known here is a well-defined mental state, we may make the application to the psychical side without fear of theoretical entanglement. A memory consists of images reproducing a past experience with its surroundings and date, and in addition to these there is nothing but the fact that we act as if the experience were no longer real, and perhaps also speak the word 'past.' The images resemble the past experience, they are its remote effect, and they enable us to act—there is nothing further in memory.

When we pass to the case of perception and consider the relations of things on the psychical side, a difficulty arises through the fact that there might appear to be here no reality distinct from the perception and bearing the same relation to it that the extra-bodily tree bears to the brain-event. And there can be no question that perception is not, in appearance at least, a form of representative knowledge like memory. It never occurs to the plain man that behind the thing he perceives there may be a thing-in-itself. On the other hand, I venture to assert that it will be found impossible to square the facts of perception with the physiological data above set forth as to its conditions without the help of a panpsychist or other realistic theory. It is possible, of course, to ignore the physiological facts, to reason in all respects as if they were non-existent, or again to adopt the device of considering that they are simply other facts of perception, on a footing with the object perceived, and so to abolish their significance. The trouble is, that this leaves wholly unexplained the surprising fact that the occurrence of the tree *quâ* perception is conditioned on the occurrence of the brain-process *quâ* physical event. But I will not attempt to argue in a paragraph a question discussed at length in my recent book *Why the Mind has a Body*. I will content myself with pointing out that, granting a thing-in-itself behind the phenomenal tree, the perception becomes a representative of it and a means of adjusting our relations to it, in exactly the same way in which the memory is a means of adjusting our relations to the past experience. Here, then, as before, we find the cognitive relation to be resolvable into the two elements of resemblance or correspondence ('symbolism') and causation.

Coming now to conceptual knowledge, we must distinguish cases where the object conceived is a concrete individual from cases where it is a class of things or an abstract quality. When I think of Oliver Cromwell, says Professor Royce (*Spirit of Modern Philosophy*, p. 369), Cromwell "is not just now causing any ideas in" me; and, since resemblance of itself can not constitute cognition, he concludes that the cognitive relation is irresolvable and unique, that it consists in a conscious 'pointing' or 'meaning'—a relation which in *The World and the Individual* he amplifies into a deliberate conscious effort on the part of the idea to represent its object (see vol. i., pp. 24, 25 and 31).[2] But, if I think of Oliver Cromwell now, my thought is not so independent of causal relations as it might at first sight appear. Cromwell's figure impressed his contemporaries, they recorded their impressions in books, the books have come down to our day and their contents passed over into current histories, some of which I have read, etc.—a tangled network of causal relations, no doubt, but without them I should not now be thinking of Oliver Cromwell.

In the conception of a class of things, the presence of causality would, I think, be demonstrated by a study of the manner in which in the child's mind the conception of a class of things grows up. The spoken name at first signifies an individual, or a pair of individuals; only gradually, and as a result of repeated application to new individuals, does it lose its particularity and acquire general significance.[3] The function of the concept when fully formed is, as Professor James says, to 'lead to' or 'terminate in' the particulars of which it is the sign; that is to say, either it conducts us by association to the thought of a particular object, or it enables us to 'act with reference to,' to 'adjust our relations to,' the qualities of particular objects. It enables us to do this both in overt action and in the sequence of our thoughts. Now, to subserve this function properly, the concept must usually, in its immediate being, be a blurred image or a dim proleptic sense of the particular things it represents, and here we have resemblance; while, at the same time, it is on the one hand an effect of the particular things, on the other hand a means of acting and thinking with reference to them, and here we have causality. For a fuller working-out of the theory in its application to the case of conception, I must refer the reader to pp. 39–42 of 'The Function of Cognition' and to pp. 537–543 of 'The Confusion of Function and Content.'

I hope, despite the necessary brevity of this article, that I have succeeded in putting the James-Miller theory in such a way as to make it appear a not wholly unplausible account of the way in which thought refers to reality. I need not say that, in my own view, the reality to which thought refers is not something different in nature from thought and more real than it, but simply other experience than that which constitutes the reality of the thought.

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[2] This notion of 'pointing' or 'meaning' is so fundamental a one in Professor Royce's system, that I am not quite sure what the result of its abandonment would be, *e. g.*, as respects the theory of a universal consciousness.

[3] The doctrine sometimes broached that the general is prior to the particular seems to me to rest on a confusion between the vagueness of ignorance and the universal reference of thought.

There is one objection to the theory to which I am concerned to reply in closing. I shall be told that this theory may be all very well as psychology, but that it never will do in epistemology. You are able, it will be said, to construct this skeptical theory only because you as critic conceive yourself outside the mind and looking on, conceive yourself beholding both the memory and the past experience, both the perception and the thing-in-itself. If you too were dependent for your knowledge upon the subjective states which are all you will admit to be immediately given, the complete uncertainty of anything beyond them would reveal itself clearly, and your theory go to pieces.

To which I reply, that I as critic learn of *my relation to* past experiences and to other minds solely by means of the subjective states which I attribute to naïve knowers. But the practical habit of the race, the instinct of acting and thinking as if we had to do with an independent reality, is strong in me, and it makes that experiencing into knowledge. And the James-Miller theory is simply, as it seems to me, the correct analysis of the experiencing, with the refusal to renounce this immemorial habit of the race.

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A STUDY OF INTENSIVE FACTS

IN the preceding paper[1] we discussed some of the definitions of intensity given by authorities, and learned that its characteristics were, the property of being greater, less or equal, and the inapplicability of addition and the whole-part relation. But since we had not shown why some facts *can* be thus described and others obviously *can not,* it seemed that we had not gone to the root of the matter. Our definition remained a mere subjective group of categories which apparently could apply anywhere we pleased. We had not yet by study of the facts discovered that property peculiar to each and every actual intensity which allows to it magnitude and denies it the whole-part relation. To this study of cases, the second part of our task, we now proceed.

We begin with time. I try to show that it is a genuine intensity, and that the reason lies in that property, peculiar to time, of being a series of individual moments which can not recur—or, to put it in

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[1] JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHOD, Vol. I., No. 9.